

CLAIMS

1. An evaporated fuel treatment device for internal combustion engine that uses a canister to absorb evaporated fuel generated in a fuel tank for evaporated fuel treatment purposes, said device comprising:
- a sealing valve for controlling the continuity between said fuel tank and said canister;
 - a purge control valve for controlling the continuity of a purge path for communication between said canister and the internal combustion engine;
 - a differential pressure generation means for producing a pressure differential between the inside and the outside of the canister;
 - a leak check means for activating said differential pressure generation means while said purge control valve is closed, and conducting a system leak check in accordance with a resulting pressure generated within a hermetically closed space containing said canister or within a hermetically closed space containing said fuel tank; and
 - a sealing valve diagnostic means for conducting a failure diagnostic check on said sealing valve simultaneously with the execution of processing for said leak check;
 - wherein said sealing valve diagnostic means comprises an open failure diagnostic means for activating said differential pressure generation means while said purge control valve and said sealing valve are closed, and conducting an open failure diagnostic check on said sealing valve in accordance with a resulting pressure generated within a hermetically closed space containing said canister or within a hermetically closed space containing said fuel tank; and a close failure diagnostic means for conducting a close failure diagnostic check on said sealing valve in accordance with a differential pressure that is generated between both sides of said sealing valve upon said open failure diagnostic check.
2. The evaporated fuel treatment device for internal combustion engine according to claim 1, wherein said leak check means conducts said leak check by using a pressure remaining within a hermetically closed space

containing said canister or within a hermetically closed space containing said fuel tank after said close failure diagnostic check.

3. The evaporated fuel treatment device for internal combustion
5 engine according to claim 1, wherein said open failure diagnostic means
determines an open failure of said sealing valve if the pressure within a
hermetically closed space containing said canister reaches a prescribed steady
state during activity of said differential pressure generation means without
attaining a sealing valve open failure judgment value or without deviating more
10 than a predetermined judgment value from the pressure within a hermetically
closed space containing said fuel tank.

4. The evaporated fuel treatment device for internal combustion
engine according to claim 1, wherein said close failure diagnostic means
15 comprises a sealing valve open instruction means for issuing a valve open
instruction to said sealing valve when a differential pressure is generated between
both sides of said sealing valve after said open failure diagnostic check; and a
close failure judgment means for determining whether a close failure has occurred
in said sealing valve by checking whether the pressure within a hermetically
20 closed space containing said canister or within a hermetically closed space
containing said fuel tank varies upon issuance of said valve open instruction.

5. The evaporated fuel treatment device for internal combustion
engine according to claim 1 wherein said close failure diagnostic means
25 comprises a differential pressure adequacy judgment means for determining
whether the differential pressure generated between both sides of said sealing
valve is adequate for a close failure diagnostic check on said sealing valve; and an
adequate differential pressure generation means for varying, if an inadequate
differential pressure is generated between both sides of said sealing valve, the
30 pressure within a hermetically closed space containing said canister until an
adequate differential pressure is obtained.